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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,575	01/29/2004	Gregory C. Loney	3579.1	8580

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EXAMINER

FORMAN, BETTY J

ART UNIT PAPER NUMBER

1634

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/769,575

Applicant(s)

LONEY, GREGORY C.

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 13-19 and 28-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 20-27, 35 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, Claims 1-12, 20-27 and 35-36 in the reply filed on 28 August 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The specification is objected to because the first paragraph identifies a "related" application. 37 C.F.R. § 1.78 requires that all cross-referenced applications, to which priority is claimed, be identified by the relationship.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 8, 20-25 and 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Troll (U.S. Patent No. 5,721,435, issued 24 February 1998).

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Regarding Claim 1, Troll discloses a system providing focus elements, the system comprising a biological probe array having an active area and a plurality of focus elements in an unambiguous pattern (spaced apart at known distances, Abstract, Fig. 2-3).

Regarding Claim 2, Troll discloses the system wherein the focus elements are outside the active area (e.g. grid lines surrounding selected areas, Column 3, lines 56-65 and Fig. 2-3).

Regarding Claim 3, Troll discloses the system wherein the focus elements are reflective elements (Column 4, lines 53-62).

Regarding Claim 4, Troll discloses the system wherein the focus elements "represent" chrome elements i.e. aluminum or other reflective metal (Column 5, lines 10-12). It is noted that the claims are broadly drawn to elements that "represent chrome elements". The term "represent" is reasonably interpreted to encompass the reflective metal of Troll, because chrome is a reflective metal and therefore other reflective metals would "represent" chrome.

Regarding Claim 8, Troll discloses the system wherein the unambiguous pattern represents a checkerboard i.e. grid illustrate in Fig. 2.

Regarding Claim 20, Troll discloses a system providing focus elements, the system comprising a biological probe array having an active area and a plurality of calibration elements in a rectilinear pattern (Column 4, lines 55-67 and Fig. 2-3).

Regarding Claim 21, Troll discloses the system wherein the calibration elements are disposed in the active area of the array (i.e. the reference marking are interspersed among the arrays, Column 3, lines 56-60).

Regarding Claim 22, Troll discloses the system wherein the focus elements "represent" chrome elements i.e. aluminum or other reflective metal (Column 5, lines 10-12). It is noted that the claims are broadly drawn to elements that "represent chrome elements". The term "represent" is reasonably interpreted to encompass the reflective metal of Troll, because chrome is a reflective metal and therefore other reflective metals would "represent" chrome.

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Regarding Claim 23, Troll discloses the system wherein the calibration elements have a vertical and horizontal element (Fig. 2-3).

Regarding Claim 24, Troll discloses the system wherein the vertical component is at a right angle to the horizontal component, hence x and y linearity (Fig. 2-3).

Regarding Claim 25, Troll discloses the system further comprising a scanner and image analysis application (Column 2, lines 32-47).

Regarding Claim 35, Troll discloses a system providing focus elements, the system comprising a plurality of biological probe arrays having an active area and a plurality of focus elements in an unambiguous pattern (spaced apart at known distances, Abstract, Fig. 2-3).

Regarding Claim 35, Troll discloses a system providing focus elements, the system comprising a plurality of biological probe arrays having an active area and a plurality of calibration elements in a rectilinear pattern (Column 4, lines 55-67 and Fig. 2-3).

5. Claims 1-3, 5-7, 9-12, 20-21, 23-27, 35-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Noblett (U.S. Patent No. 6,362,004, filed 9 November 1999).

Regarding Claim 1, Noblett discloses a system providing focus elements, the system comprising a biological probe array having an active area and a plurality of focus elements (fiducial) in an unambiguous pattern (Column 3, lines 24-35 and Column 7, lines 30-43).

Regarding Claim 2, Noblett discloses the system wherein the focus elements are outside the active area (e.g. Fig. 2, #127).

Regarding Claim 3, Noblett discloses the system wherein the focus elements are reflective elements (Column 4, lines 23-49).

Regarding Claim 5, Noblett discloses the system wherein the focus elements are enabled to hybridized to targets (i.e. include the same material as target spots, Column 5, lines 38-41).

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Regarding Claim 6, Noblett discloses the systems wherein the target molecules represent biological sample (Column 6, lines 64-67).

Regarding Claim 7, Noblett discloses the system wherein the target molecules are added by the user (Column 6, lines 64-67). It is noted that the claim is drawn to an intended use for the system. The courts have stated that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Regarding Claim 9, Noblett discloses the system further comprising a scanner for acquiring an image and an image analysis system for making positional adjustments based on the image (Abstract, Column 3, lines 24-35 and Column 6, lines 41-48).

Regarding Claim 10, Noblett discloses the system wherein the position adjustment translates the array in the x-y axis (Column 3, lines 24-35)

Regarding Claim 11, Noblett disclose the system wherein the position adjustment "represents" placement of probes in a plane of focus (Column 6, lines 41-48).

Regarding Claim 12, Noblett discloses the system wherein the image analysis applies deconvolution i.e. filters to selective imaging (Column 4, lines 23-67).

Regarding Claim 20, Noblett discloses a system providing calibration elements, the system comprising a biological probe array having an active area and a plurality of calibration elements (fiducials and/or dilution spots) in an unambiguous pattern (Column 5, lines 49-56 and Fig. 2).

Regarding Claim 21, Noblett discloses the system wherein the calibration spots are on the active surface (e.g. dilution spots on the slide, Column 5, lines 53-56 and Fig. 2).

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Regarding Claim 23, Noblett discloses the system wherein the calibration elements have a vertical and horizontal component (i.e. the crosshair has a vertical and horizontal component (Fig. 2, #127).

Regarding Claim 24, Noblett discloses the system wherein the vertical component is at a right angle to the horizontal component, hence x and y linearity (Fig. 2 #127).

Regarding Claim 25, Noblett discloses the system further comprising a scanner for acquiring an image and an image analysis system for error correction (i.e. position) based on the image (Abstract, Column 3, lines 24-35 and Column 6, lines 41-48).

Regarding Claim 26, Noblett discloses the system wherein the error correction is based on pixel position (Column 4, lines 23-35 and Column 6, lines 41-48).

Regarding Claim 35, Noblett discloses a system providing focus elements, the system comprising a plurality of biological probe arrays having an active area and a plurality of focus elements (fiducial) in an unambiguous pattern (Column 3, lines 24-35 and Column 7, lines 30-43).

Regarding Claim 36, Noblett discloses a system providing calibration elements, the system comprising a plurality of biological probe arrays having an active area and a plurality of calibration elements (fiducials and/or dilution spots) in an unambiguous pattern (Column 5, lines 49-56 and Fig. 2).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 4 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noblett (U.S. Patent No. 6,362,004, filed 9 November 1999) in view of Troll (U.S. Patent No. 5,721,435, issued 24 February 1998).

Regarding Claims 4 and 22, Noblett discloses a system providing focus elements, the system comprising a biological probe array having an active area and a plurality of focus elements (fiducial) in an unambiguous pattern (Column 3, lines 24-35 and Column 7, lines 30-43). Noblett further teaches the fiducial comprises a label of "frosted region" (Column 5, lines 26-31) but the reference does not specifically teach the composition of the label and/or frosted region. However, Troll teaches a similar system comprising fiducial markings wherein the label comprises reflective material e.g. aluminum or other reflective metal (Column 5, lines 10-12). This clearly suggests that reflective metals would function equally well as markings on the surface. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the reflective metal markings of Troll to the markings of Noblett. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success based on the teaching of Troll wherein any reflective metal would function equally as markers.

The courts have stated that selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297, and *In re Leshin*, 227 F.2d. 197, 125 USPQ 416 (MPEP § 2144.07).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noblett (U.S. Patent No. 6,362,004, filed 9 November 1999) in view of Fiekowsky et al (U.S. Patent No. 6,090,555, issued 18 July 2000).

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Regarding Claim 8, Noblett discloses a system providing focus elements, the system comprising a biological probe array having an active area and a plurality of focus elements (fiducial) in an unambiguous pattern (Column 3, lines 24-35 and Column 7, lines 30-43). Noblett further teaches that any number and/or arrangement of fiducials are contemplated and useful to improve accuracy (Column 5, lines 44-48) but the reference does not teach a checkerboard pattern. However, checkerboard patterns for image alignment were well known in the art at the time the claimed invention was made as taught by Fiekowsky et al (Column 7, lines 43-63). Fiekowsky et al further teach that any recognizable pattern would function equally well (Column 7, lines 60-63). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fiducial arrangement of Noblett into a checkerboard pattern. One of ordinary skill in the art would have been motivated to do so based on the suggestion of Noblett i.e. any number and/or arrangement of fiducials are contemplated and useful to improve accuracy (Column 5, lines 44-48). One of ordinary skill would have been further motivated with a reasonable expectation of success based on the checkerboard markers and teaching of Fiekowsky wherein it is taught that any recognizable pattern would function equally well (Column 7, lines 60-63).

Conclusion

9. No claim is allowed.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

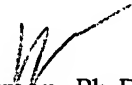
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.



BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
November 3, 2006